

DESCRIPTION

COMPOUND CAPABLE OF BINDING S1P RECEPTOR

AND PHARMACEUTICAL USE THEREOF

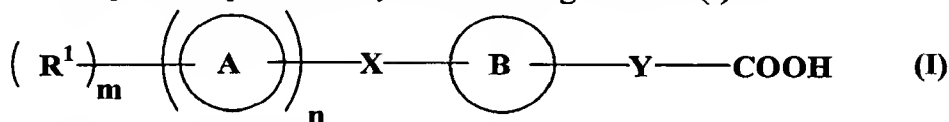
This application is a 371 of PCT/JP04/12768 filed August 27, 2004
 which claims priority to JP 2003-306088 filed August 29, 2003.

Technical Field

The present invention relates to a compound having an ability to bind to a sphingosine-1-phosphate (hereinafter referred to as S1P in some cases) receptor which is useful as a medicament and a medicament containing the same as an active ingredient.

More specifically, the present invention relates to:

- (1) a compound having an ability to bind to an S1P receptor (in particular, EDG-6, preferably EDG-1 and EDG-6);
- (2) a medicament containing the compound as an active ingredient;
- (3) a compound represented by the following formula (I):



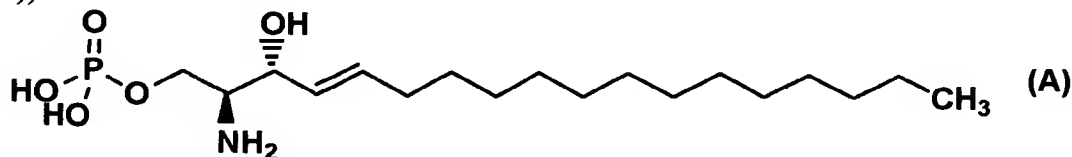
wherein all symbols have the same meanings as described below;

a prodrug thereof and a salt thereof; and

- (4) a medicament containing the compound represented by formula (I), a prodrug thereof and a salt thereof as an active ingredient.

Background Art

Sphingosine-1-phosphate (S1P) having the structural formula represented by formula (A) is a lipid that is produced by the intracellular metabolic turnover of sphingolipids or the extracellular action of secretory sphingosine kinase. It is pointed out that S1P acts as an intercellular and intracellular messenger (*Biochem. Pharm.*, 58, 201 (1999)).



As receptors of S1P, EDG-1 which is a G protein-coupled receptor and its analogous molecules, EDG-3, EDG-5, EDG-6 and EDG-8 (also called S1P₁, S1P₃, S1P₂, S1P₄ and S1P₅, respectively) are known. They are called EDG receptor family together with EDG-2, EDG-4 and EDG-7 which are receptors of lysophosphatidic acid (LPA). S1P receptors binds to S1P and deliver signals into cells via G-protein coupled with the